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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/927,201	08/10/2001	Richard L. Baer	10010802-1	3806

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EXAMINER	
AGGARWAL, YOGESH K	

ART UNIT	PAPER NUMBER
2622	

DATE MAILED: 06/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/927,201	BAER, RICHARD L.	
	Examiner	Art Unit	
	Yogesh K. Aggarwal	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-11,14-17,20,21,24 and 25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *11 and 14-16* is/are allowed.

6)☒ Claim(s) *1,7,8,10,17,20 and 21* is/are rejected.

7)☐ Claim(s) *4-6,9,24 and 25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments filed 03/13/2006 have been fully considered but they are not persuasive.

Examiner's response:

2. Applicant argues with regards to claim 1 that Iwakawa fails to teach dividing said image data by said flicker function on a row-by-row basis. The Examiner respectfully disagrees.. Iwakawa teaches in figure 3 the principle of the invention wherein the compensated output Vc (x, y) corresponding to a pixel (x, y) on an original copy 31 is represented by the following equation (1):

$Vc(x, Y)=V0*V(x, y)/\mathbf{Vref(y)}$ ..... (1)

where Vref(y) represents a flicker detection signal, V(x, y) represents a video signal of the original copy 31 (col. 4 lines 12-32). Similar to figure 3, figures 4 to 9 represent the first embodiment of the invention and have a division circuit 5 (figure 4) that performs the division Vin/Vref, using the sample hold Vref obtained from the sample-hold 3 (col. 5 lines 55-59). Therefore Vref represents the flicker signal as explained in figure 3 according to a principle of the invention. Different rows are shown in figure 5a. Thus Iwakawa does teach dividing said image data by said flicker function on a row-by-row basis.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 7, 8, 17, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasahara et al. (US Patent # 6,710,818) in view of Iwakawa et al. (US Patent # 6,208,433).

[Claim 1]

Kasahara discloses a method for removing image artifacts from an image of a scene illuminated by a periodically varying light source, said image represented by an image data array comprising a plurality of rows of image data, the method comprising:

determining a flicker function that models light emission of the periodically varying light source (e.g., column 8, line 28 – column 9, line 10), wherein said flicker function is a function of flicker amplitude, flicker frequency and flicker phase of the periodically varying light source (e.g., as shown in Fig. 4A the flicker is a function of amplitude, frequency, and phase based on the varying light source, Col. 9 lines 6-10, figure 4a teach that the output of dividing circuit 4 (figure 1) on the ordinate axis represents flicker and abscissas represents line number at a frame. Therefore in figure 4a, flicker is shown to be varying with amplitude, frequency and phase of a periodically varying light source. Line numbers of a particular frame represent the luminance level of particular pixel on which light from the varying light source is converted into electrical energy also stated in col. 8 lines 28-32) and

processing said image data using said flicker function so as to remove said image artifacts from said image (e.g., column 15, lines 48-51; column 16, lines 5-13).

Kasahara fails to disclose image data comprises an image data array comprised of a plurality of rows of image data, and wherein said processing step comprises dividing said image data by said flicker function on a row-by-row basis. However Iwakawa discloses said image data comprises an image data array comprised of a plurality of rows of image data, and wherein said

processing step comprises dividing said image data by said flicker function on a row-by-row basis (e.g., Examiner notes that the scene is scanned by the one-dimensional image sensor so as to generate two-dimensional image data wherein each row is corrected by dividing the image signal by the flicker function; column 5, lines 14-19 and 41-67, Also See col. 4 lines 12-32, figure 3).

Therefore taking the combined teachings of Kasahara and Iwakawa, it would be obvious to one skilled in the art at the time of the invention to have been motivated to have an image data array comprised of a plurality of rows of image data, and wherein said processing step comprises dividing said image data by said flicker function on a row-by-row basis in order to prevent the flicker due to line-by-line deviation (col. 5 lines 64-67).

[Claims 7 and 8]

In regards to claims 7 and 8 see Examiner's notes on the rejection of claim 1 above.

[Claims 17, 20 and 21]

In regards to claims 17, 20 and 21 see Examiner's notes on the rejection of claim 1.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over (Kasahara et al. (US Patent # 6,710,818), Iwakawa et al. (US Patent # 6,208,433) and in further view of (Applicant's Admitted Prior Art, herein AAPA).

[Claim 10]

In regards to claim 10 Kasahara in view of Iwakawa does not disclose that the image data is collected from a CMOS image sensor utilizing a rolling shutter to provide exposure control. Examiner notes the specification on page 2, lines 7-12 wherein AAPA discloses that it is known to utilize a CMOS image sensor with a rolling shutter to provide exposure control. AAPA

further discloses on page 3, lines 1-7 that in using a rolling shutter, since each row of image data is produced at a different time, under a varying light source flicker will be produced. Examiner notes that scanning a scene using a linear image sensor is functionally equivalent to using an image sensor with a rolling reset, since each row of image data is produced at a different time and the scene is sequentially scanned. Examiner notes that one skilled in the art would clearly recognize that replacing the moving mirror and linear image sensor with a CMOS image sensor utilizing a rolling reset would reduce the number of mechanical parts and further would enable a reduction in the frame period for scanning the scene since multiple lines are being exposed in parallel using a rolling reset. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have replaced Kasahara's linear image sensor in view of Iwakawa with a CMOS image sensor with a rolling shutter to provide exposure control in order to reduce the number of mechanical parts and further enable a reduction in the frame period for scanning the scene as would be recognized by one skilled in the art.

Allowable Subject Matter

6. Claims 11 and 14-16 are allowed.

7. Claims 4-6, 9, 24 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

See previous office action for reasons for allowance.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh K. Aggarwal whose telephone number is (571) 272-7360. The examiner can normally be reached on M-F 9:00AM-5:30PM.

9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571)-272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

YKA
June 12, 2006

DAVID OMETZ
SUPERVISORY PATENT EXAMINER